INDIANA
Epidemiology
NEWSLETTER

Indiana State Department of Health

Epidemiology Resource Center
2 North Meridian Street, 5-K
Indianapolis, IN 46204
317/233-7125

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Indiana Law Requires Public and Private Schools to Provide Information about Meningococcal Disease and Vaccines to Parents or Guardians

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ISDH Epidemiology Resource Center

As of July 1, 2005, the chief administrative officers of public and private schools must ensure that information concerning meningococcal disease and its vaccines will be provided to the parents or guardians of students at the beginning of each school year. The information is to include the cause, symptoms and spread of meningococcal disease as well as where parents and guardians may obtain additional information and vaccinations for their children. The Indiana Department of Education (DOE) has been given the responsibility of implementing IC 20-30-5-18 (formerly IC 20-10-10.1-4-16).

The law does not indicate in which grades the information should be distributed. The current vaccine, MCV4 *(***Menactra™***), used to prevent meningococcal disease is licensed for use in ages 11-55. Thus, parents or guardians of children 11 years of age and older should expect to receive information as stated above. The Indiana State Department of Health will be working with the DOE to develop the content of information to be disseminated by schools.*

Meningococcal Disease

What Is Meningococcal Disease?
Meningococcal disease is a rare but potentially fatal bacterial infection. Invasive meningococcal infections are caused by the bacterium *Neisseria meningitidis*, (also known as meningococcus), a gram negative diplococcus. There are 13 serogroups of *N. meningitidis* (A, B, C, D, 29E, H, I, K, L, W-135, X, Y, and Z). Strains belonging to groups A, B, C, Y, and W-135 are implicated most frequently in systemic disease (Figures 1 and 2). The disease presents as either meningococcal meningitis, which is an inflammation of the

membranes surrounding the brain and spinal cord, or meningococcemia, which is the presence of the bacteria in the blood.

Meningococcal disease can quickly lead to death , sometimes within 48-72 hours after onset of symptoms. Of those who survive, 10 percent have severe aftereffects of the disease, including mental retardation, hearing loss, and loss of limbs. Meningococcal disease strikes about 3,000 Americans each year and is responsible for approximately 300 deaths annually. It is estimated that 100 to 125 cases of meningococcal disease occur annually on college campuses, and 5 to 15 students die as a result.

Figure 1

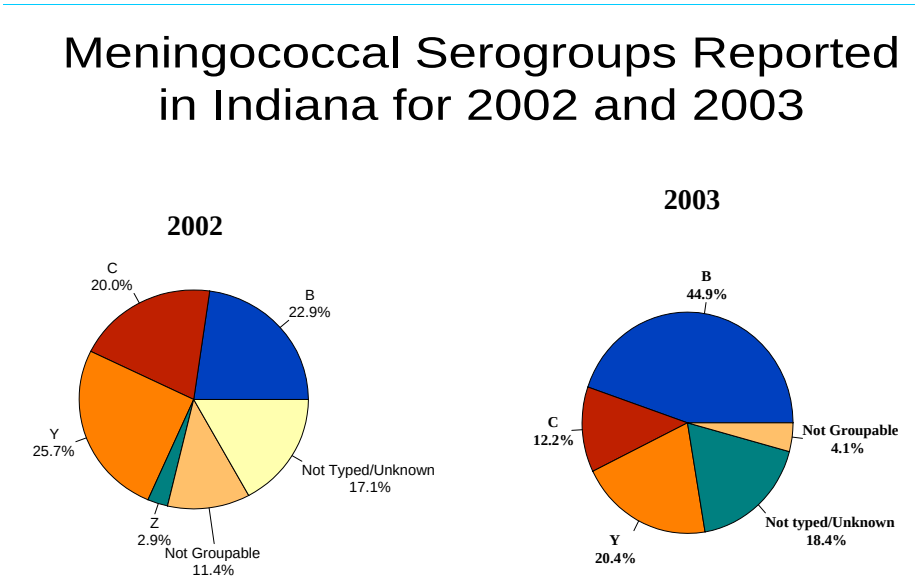
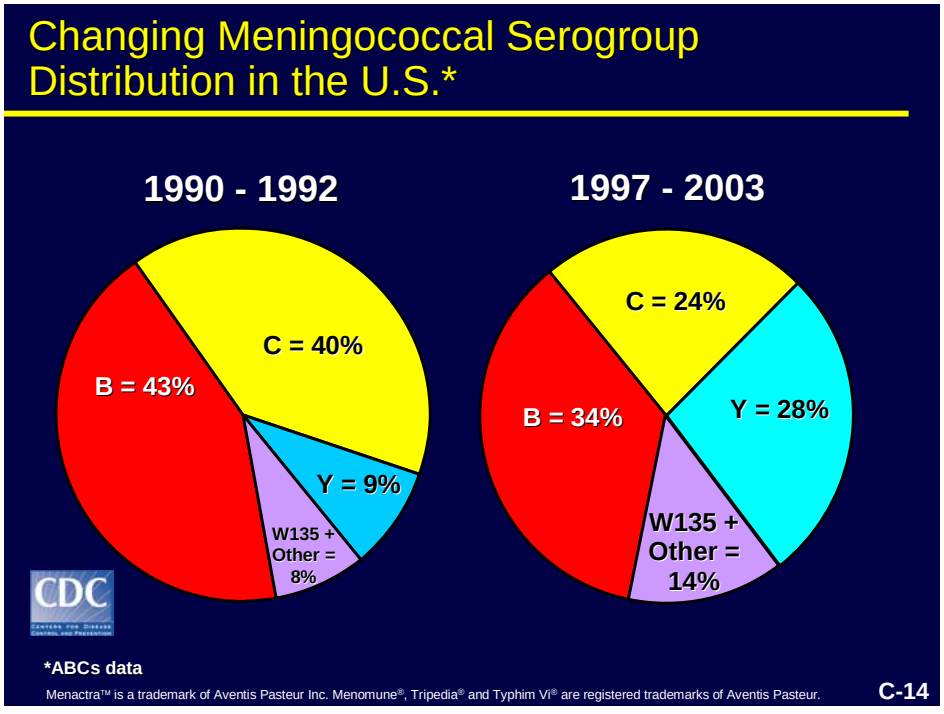


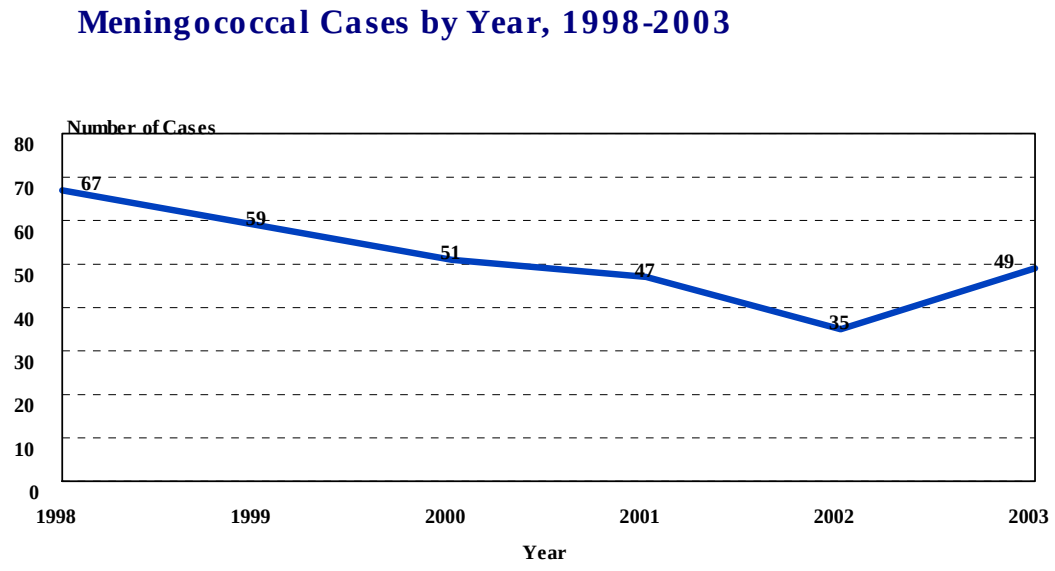
Figure 2



How Is Meningococcal Disease Transmitted?
Meningococcal bacteria are transmitted through the air via droplets of respiratory secretions and by direct contact with an infected person's nasal or throat secretions. Direct contact is defined as oral contact with shared items, such as cigarettes or drinking glasses, or through intimate contact, such as kissing. Approximately 10 percent of people carry the bacteria in their throats without any symptoms. Certain social behaviors, such as exposure to passive and active smoking, bar patronage, and excessive alcohol consumption, may put college students at increased risk for invasive disease. Patients with respiratory infections, compromised immunity, those in close contact with a known case, and travelers to endemic areas of the world are also at increased risk.

Meningococcal Disease Activity in Indiana
In 2003, 49 confirmed cases of invasive meningococcal disease were reported in Indiana, with 5 deaths (10.2 percent). Of these five deaths, ages ranged from 2-71 years, four were male and one was female. In 2002, 35 cases and 2 deaths (5.7 percent) were reported. The 35 cases reported in 2002 represent the lowest reported number of cases during 1998-2003 (Figure 3).

Figure 3



Meningococcal disease most often occurs in infants, children and young adults (Figure 4). The infant case rate increased from 8.2 cases per 100,000 population in 2002 to 11.75 cases per 100,000 in 2003. Similarly, the case rate for those in the age group 10-19 also increased from 0.56 cases per 100,000 in 2002 to 1.44 cases per 100,000 in 2003. In 2003, approximately 26 percent of the total reported cases occurred in those 10-19 years of age. Although the disease incidence occurs most often in infants and children, case fatalities occur most commonly in young adults (Figure 5).

Figure 4

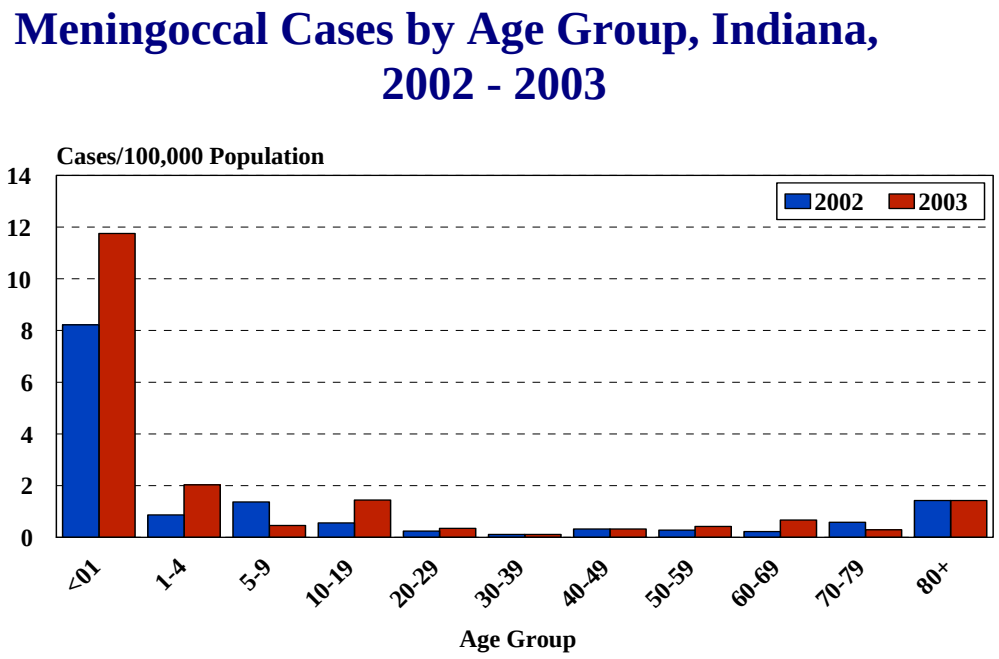
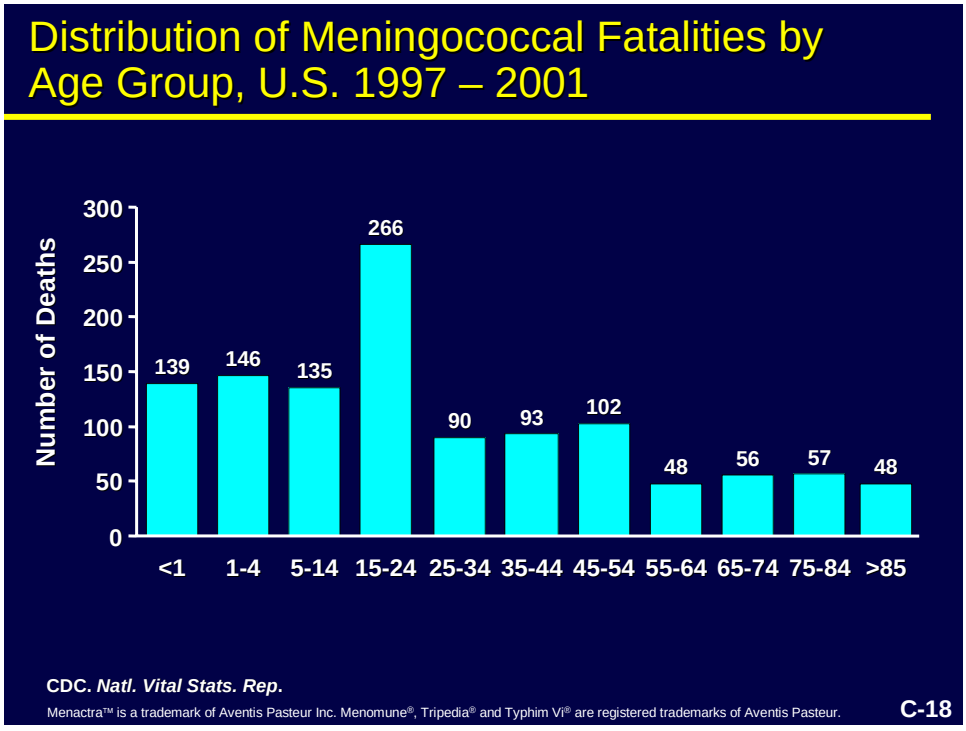


Figure 5



Vaccine Recommendations

The Advisory Committee on Immunization Practices (ACIP) to the Centers for Disease Control and Prevention (CDC) has recommended that children 11-12 years of age, teens entering high school, and college freshmen living in dormitories receive a newly licensed meningococcal vaccine (Menactra™) manufactured by Sanofi Pasteur. The U.S. Food and Drug Administration (FDA) licensed this new polysaccharide-protein conjugate vaccine on January 14, 2005, for use in people 11-55 years of age. The ACIP currently recommends a routine doctor's visit for children 11-12 years of age, at which time they may receive a tetanus-diphtheria booster dose. These children may also receive the meningococcal vaccine during this routine visit. In order to foster the most rapid reduction of meningococcal disease following this recommendation, ACIP also recommended that teens entering high school who have not previously received MCV4 should also be vaccinated. College freshmen who live in dormitories are at higher risk of meningococcal disease than other college students and should also be vaccinated. Meningococcal vaccine may also be provided to college students who do not live in dormitories and adolescents who want to reduce their risk for acquiring meningococcal disease. The vaccine is highly effective; however, it does not protect people against disease caused by the type B meningococcal strain, which causes one third of meningococcal cases (Figure 1). More than half of the cases among infants less than one year of age are also caused by type B, for which no vaccine is licensed or available in the United States.

Source: *http://www.cdc.gov/nip/vaccine/meningitis/mcv4/mcv4_acip.htm*

Vaccines Compared

Meningococcal Conjugate Vaccine (MCV4), which is Menactra™
This vaccine is licensed in the U.S. for persons 11-55 years of age. It is likely that this vaccine or a similar vaccine will be licensed for younger age groups in the future. This vaccine is recommended for:

- Young adolescents at the preadolescent doctor's visit (11-12 years old)
- Adolescents at high school entry (about 15 years old)
- Groups that have a higher risk of meningococcal disease, such as college freshmen living in dormitories

The most common adverse reactions to Menactra™ vaccine may include pain, redness, and indurations at the site of injection, headache, fatigue and malaise. Menactra™ vaccine is contraindicated in persons with known hypersensitivity to any component of the vaccine or to latex, which is used in the vial stopper.

Meningococcal Polysaccharide Vaccine (MPSV4), which is Menomune™
This vaccine is recommended for people 2-10 years of age and over 55 years of age who have an increased risk of disease due to certain medical conditions. People at high risk need revaccination every three-five years.

Further information comparing Menomune™ and Menactra™ can be found at the following website:
http://www.fda.gov/ohrms/dockets/ac/04/slides/4072S1_3.ppt

Conclusions

This new legislation ensures that information concerning meningococcal disease and related vaccines will be provided to parents, guardians and students at the beginning of each school year. Providing this information fosters an informed decision regarding vaccination of the student. Parents and guardians are encouraged to consult with their health care provider if they have additional concerns.

For questions about meningococcal disease or vaccines to prevent meningococcal disease, contact your physician or your local health department.

Suggested Links

http://www.cdc.gov/ncidod/dbmd/diseaseinfo/meningococcal_g.htm

http://www.in.gov/isdh/healthinfo/meningococcal%20disease.htm

http://www.in.gov/isdh/publications/2002communicable_disease_ref_guide/meningococcal.htm

http://www.in.gov/isdh/publications/2002communicable_disease_ref_guide/meningococca_letter.htm

How Can You Prevent and Control Meningococcal Disease?

Data from the CDC indicate that college freshmen, particularly those who live in dormitories, are at modestly increased risk for acquiring meningococcal disease relative to other persons their age. Vaccination with the currently available vaccine, Menactra™, will decrease the risk for meningococcal disease among such persons.

Other preventive measures include:

- practice good hand washing
- avoid sharing beverage containers, cigarettes, lipstick, or eating utensils
- avoid smoking and smoky environments
- get plenty of sleep and exercise regularly
- eat a balanced diet and avoid excessive alcohol consumption

MCV4 (Menactra™) vaccine has been recommended for use by the ACIP and placed on the schedule of vaccines for the Vaccines For Children (VFC) Program. The Indiana Immunization Program has not received funding to purchase MCV4 at this time. We anticipate that the VFC Program will be able to supply this vaccine in early 2006.

Until then, Medicaid eligible children may receive the vaccine. Medicaid providers may purchase the vaccine and then bill Medicaid. To obtain the proper billing code and reimbursement rate, providers should contact EDS at 800.577.1278 or 317.655.3240. VFC providers should read the weekly *Vaccine E-Letter* for future information on Menactra™ availability.

Public Health Preparedness District 2 Influenza Survey

By Tom Duszynski
Field Epidemiologist
Public Health Preparedness District 2

In January 2005, the public health group of Public Health Preparedness District 2 decided that a survey of the number of health care workers in public health departments, hospitals, and nursing homes or assisted living facilities who receive the influenza vaccine would be useful in directing future educational efforts. The 2004-2005 influenza season, however, proved to be a challenge when Chiron, one of the nation's vaccine producers, developed quality assurance problems which led to the shortage of nearly half of the vaccine supply available to the public in the United States.

With the imminent shortage, the Centers for Disease Control and Prevention (CDC) recommended that limiting the vaccine to those at greatest risk would be the best strategy in protecting the public. This included children ages 6-23 months, adults ages 65 years and older, persons ages 2-64 years with chronic medical conditions, pregnant women, children ages 6-18 years on chronic aspirin therapy, **health care workers with direct patient contact**, and out-of-home caregivers and household contacts of children aged <6 months. Healthy people ages 5-49 years had the option of receiving the nasal spray, attenuated influenza vaccine.

The District 2 survey was created to gather information, as well as to provide each county the opportunity to build relationships with other public health partners in their communities by identifying a contact person at each facility. It would also provide the county with an estimated number of health care workers in the county broken out by direct patient contact and non-patient contact. The public health group intends to continue to conduct this survey annual to document educational efforts and improve relationships and reporting.

Within the 7 counties that comprise District 2, 43 facilities completed the survey: 4 assisted living facilities, 4 health departments, 6 hospitals, 28 nursing/long term care facilities, and 1 student medical center.

Aggregate Results of the Survey

The word "Employees" refers to health care workers both with patient and non-patient contact unless otherwise stated.

Total Number of Employees		**Total Employees Vaccin. 2004-05**	**Percent Vaccinated**
Elkhart	1,299	739	57%
Fulton	340	177	52%
Kosciusko	1,395	419	30%
Marshall	811	363	44%
Pulaski	195	83	42%
St. Joseph	1,194	391	33%
Starke	0	0	0
Totals	**5,234**	**2,172**	**42%**

Vaccine available at reduced or no cost to employees
Out of the 43 facilities surveyed, 41 offered the vaccine at a reduced or no cost to those employees who wanted it.

Number of Cases reported in 2004-2005 Influenza Season 311

Number of Cases reported in 2003-2004 Influenza Season 340

Employees with Patient Contact

40% of employees have direct patient contact.

County	**Employees with Patient Contact Vaccinated**	**Total # of employees vaccinated without patient contact.**
Elkhart	645	54
Fulton	138	39
Kosciusko	280	139
Marshall	295	68
Pulaski	62	21
St. Joseph	354	37
Starke	0	0
Totals	**1,774**	**358**

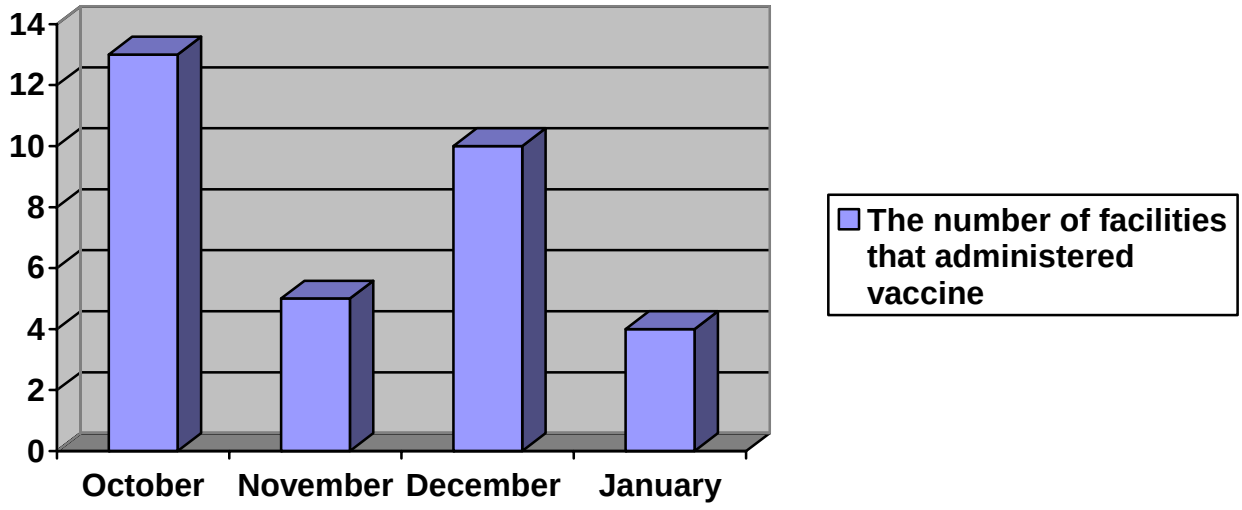
Percentage Vaccinated That Have Regular Patient Contact by County	
Elkhart	49%
Fulton	40%
Kosciusko	20%
Marshall	36%
Pulaski	31%
St. Joseph	29%
Starke	
Total	**34%**

As the 2004-2005 season progressed and appeared to be falling into a more "typical" seasonal pattern, as opposed to the 2003-2004 season in which the peak came early and caused significant morbidity earlier, the shortage proved to be less of an issue. By December, the CDC began to expand its recommendations for restrictions, and vaccine was available to a larger percentage of the population.

According to the CDC Behavioral Risk Factor Surveillance System (BRFSS) 2005 Flu Vaccination Report, nationwide 45.9 percent of health care workers (HCW) with patient contact had received an influenza vaccine in the past 12 months. In that same report, 34.7 percent of the adults in any of the priority groups had received an influenza vaccination, and in the Midwest, that number shrank to 25.5 percent. In the same report, of the adults in any of the priority groups, that received an influenza vaccination; and in the Midwest, that number shrinks to 25.5 percent.

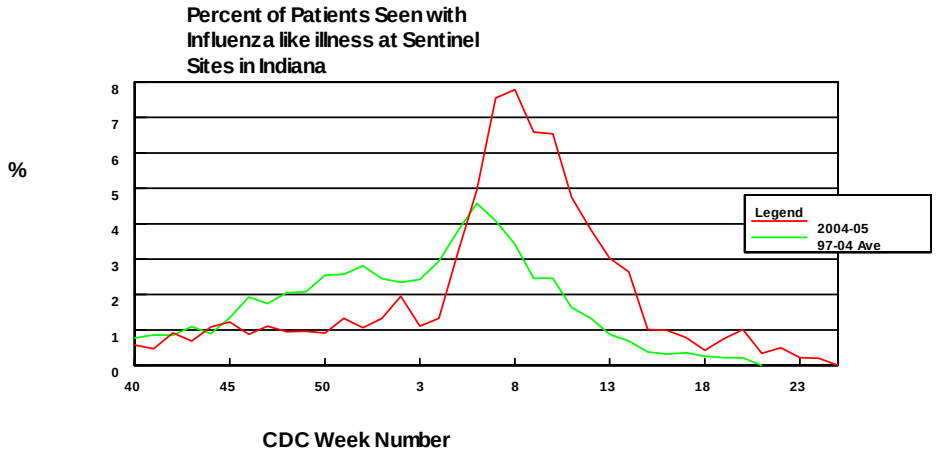
According to the District 2 survey, most of the HCW received the vaccine in October when the vaccine is typically available. In the 2004-2005 season, this was prior to the announcement of the shortage. However, once the shortage was announced and the recommendation from CDC for vaccination was released, the number of HCW who received the vaccine also dropped. In December when the recommendations were expanded, there was an increase in the number of HCW who received the vaccine, with a decline in January, when there was sufficient vaccine available (Figure 1).

Figure 1



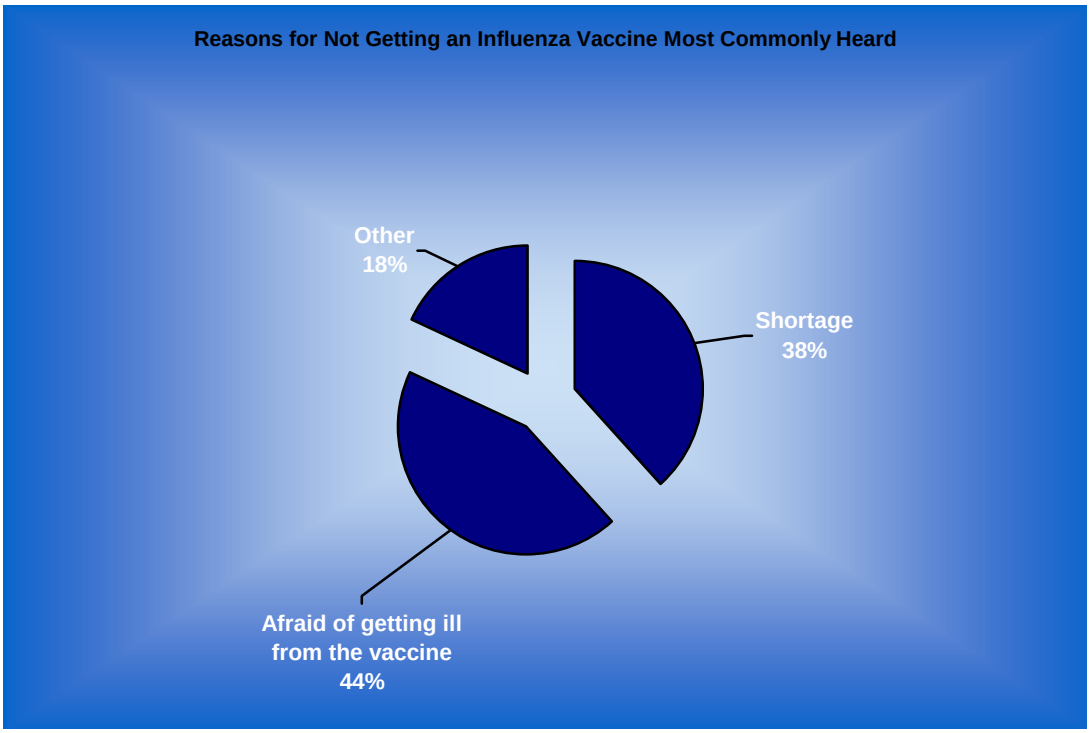
There was a small percentage of HCW who declined the vaccine in January, citing that it was too late to provide protection. In the 2004-2005 season, however, this was not the case, since the number of cases did not peak until February. There is typically a two week window from the time of vaccination to the time of seroconversion providing immunity. Figure 2 demonstrates that the actual peak of cases seen by sentinel physicians in Indiana did not occur until the eighth week of the year, which is near the end of February.

Figure 2



Other reasons, for not being vaccinated, cited in the survey, included fear of vaccine contamination fueled by media reports of Chiron's quality control issues. None of the vaccine from Chiron was ever utilized. Also reported was fear of immunizations, contraindications, and a variety of other reasons. The most prevalent reason cited for not being vaccinated, however, was a fear of being infected with influenza from the vaccine (Figure 3).

Figure 3



According the CDC BRFSS 2005 Flu Vaccination Report , 41.8 percent of the total people surveyed thought they did not need the vaccine, while only 8.3 percent had concern about the vaccine. In the same report, 34.2 percent of HCW cited the vaccine shortage as the reason for not getting the vaccine.

The CDC Morbidity and Mortality Weekly Report (MMWR) from March 2005 included a report on an educational campaign in California and Minnesota to improve the influenza vaccination rates of HCW. The campaign clearly demonstrated that the "*vaccination of health-care workers has been shown to reduce influenza infection and absenteeism among HCW, (1) prevent mortality in their patients (2), and result in financial savings to sponsoring health institutions*".

In this campaign, two educational efforts were utilized: 1) a series of in-services, fact sheets, handouts and posters, providing education on the seriousness of influenza and employee misconceptions about the vaccine, and 2) "vaccine days" were advertised offering influenza vaccination at no cost on specific days to employees. When both education and advertisement measures were utilized, the vaccination rate increased from 27 to 53 percent.

In Minnesota's Veterans Affairs Medical Center, the strategy of education and convenience to improve their vaccination rate from a less than 25 percent in the mid-1980s to 65 percent in 2003-2004 influenza season proved very successful. The center initiated a "Mobile Vaccination Cart Program". This program brought the vaccinations to each ward at a specific time and provided both streamlined documentation and convenience.

At Minnesota's Mayo Clinic, free vaccinations were offered along with incentives such as movie tickets and books. This coupled with advertisement, and bringing the vaccine to the departments and wards again improved the vaccination rate.

In Public Health Preparedness District 2, out of the 43 institutions surveyed, all but two offered the vaccine at reduced or no cost to their employees. This is half the battle. It is obvious that increasing the vaccination rate at all levels not only saves time and resources but also saves lives. The most effective means for increasing the vaccination rate among HCW that have direct patient contact is a three-fold approach. First, has already been accomplished by offering the vaccine at no cost. Secondly, education about influenza and ease of transmission as well as risk of potential life lost is necessary to raise awareness. The final approach is bringing the vaccine to

those that should get it. The mobile "vaccination cart" method and streamlining of paperwork is highly effective. The agencies that comprise District 2 should start planning and improving their methods of promoting vaccination among HCW, especially those with direct patient contact. Not every method mentioned above will work in every facility; however, the basics of availability of vaccine, convenience and education appear to be the best strategy.

References

Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report (MMWR) March 3, 2005; *Interventions to Increase Influenza Vaccination of Health-Care Workers—California and Minnesota.*

Centers for Disease Control and Prevention, *2005 Flu Vaccination Report, January 1- January 22 by Demographics.* Behavioral Risk Factor Surveillance System (BRFSS), January 28, 2005.

Centers for Disease Control and Prevention, *Questions and Answers: 2004-05 Flu Season*, October 19, 2004

Indiana Epidemiology Newsletter, June 2005 Vol. XII, No. 6. Pontones, P. Ed. *Components of Indiana's Influenza Surveillance Program*, Richards, S.

National Foundation for Infectious Diseases, *Improving Influenza Vaccination Rates in Health Care Workers, Strategies to Increase Protection for Workers and Patients.* Schaffer, W, Program Moderator. 2004

Training Room

INDIANA STATE DEPARTMENT OF HEALTH IMMUNIZATION PROGRAM PRESENTS:

Immunizations from A to Z

Immunization and Health Educators offer this FREE, one day educational course that includes:

- Principals of Vaccination
- Childhood and Adolescent Vaccine-Preventable Diseases
- Adult Immunizations
  - Pandemic Influenza
- General Recommendations on Immunization
  - Timing and Spacing
  - Indiana Immunization Requirements
  - Administration Recommendations
  - Contraindications and Precautions to Vaccination
- Safe and Effective Vaccine Administration
- Vaccine Storage and Handling
- Vaccine Misconceptions
- Reliable Resources

This course is designed for all immunization providers and staff. Training manual, materials, and certificate of attendance is provided to all attendees.

Please see the Training Calendar for presentations throughout Indiana. Registration is required. To attend, schedule/host a course in your area or for more information; please contact

Beverly Sheets at 317-502-5722 or hepbbev@aol.com

http://www.in.gov/isdh/programs/immunization.htm

Mark your calendars NOW!

Indiana Immunization Fall Awards Conferences:

When: **Sunday, Oct. 2, 2005,** "Reception with Speakers"
Monday, Oct. 3, 2005, "Conference"
Time: 8:30 am to 3:30 pm
Where: Indianapolis Hilton, downtown.

Speakers: William Atkinson, MD, MPH
Information, Education and Partnership Branch National Immunization Program
Centers for Disease Control and Prevention

Patricia Stinchfield, RN, CNP
The Children's Immunization Project
St. Paul, Minnesota
(Newest member of the ACIP)

Check out the new ISDH Immunization Program Web site at
http://www.in.gov/isdh/programs/immunization.htm.

Notice for Eletter

NOTICE
Pandemic Influenza Preparedness
Tuesday, October 4, 2005
8:00 am to 12:30 pm

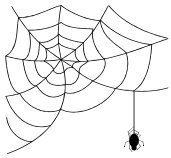
The Indiana State Department of Health Pandemic Influenza Planning Committee will host in collaboration with the ISDH Immunization Program, a "Pandemic Influenza Preparedness" educational session on Tuesday, October 4, 2005. 8 AM to 12:30 PM

Keynote Speaker: William Atkinson, MD, Education, Information and Partnership Branch, National Immunization Program, Centers For Disease Control and Prevention. Topic: "Pandemic Influenza"

Please plan to register and attend this important and timely educational offering.

Watch for announcement of location!

Pre-registration will be required due to space limitations.
Contact: Send name, address, phone, email to: Beverly Sheets, email hepbbev@aol.com, fax 317-257-2135
OR
Janet Archer, email jarcher@isdh.state.in.us, fax 317-233-7378
Hotel rooms will be available at the Hilton Downtown for lodging, Monday, October 3, 2005. Phone 317-972-0600



Wonderful Wide Web Sites

ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

http://www.in.gov/isdh/dataandstats/data_and_statistics.htm

HIV/STD Quarterly Reports (1998-March 05)	Indiana Mortality Report (1999, 2000, 2001, 2002)
Indiana Cancer Incidence Report (1990, 95, 96, 97, 98, 99)	Indiana Infant Mortality Report (1999, 2002, 2003)
Indiana Cancer Mortality Report (1990-94, 1992-96, 1999)	Indiana Natality Report (1998, 99, 2000, 2001, 2002)
Combined Cancer Mortality Incidence in Indiana Report (1999, 2000, 2001, 2002)	Indiana Induced Termination of Pregnancy Report (1998, 99, 2000, 2001, 2002, 2003)
Indiana Health Behavior Risk Factors (1999, 2000, 2001, 2002)	Indiana Marriage Report (1995, 97, 98, 99, 2000)
Indiana Health Behavior Risk Factors (BRFSS) Newsletter (9/2003, 10/2003, 6/2004, 9/2004,4/2005, 7/2005)	Indiana Infectious Disease Report (1997, 98, 99, 2000, 2001)
Indiana Hospital Consumer Guide (1996)	Indiana Maternal & Child Health Outcomes & Performance Measures (1990-99, 1991-2000, 1992-2001, 1993-2002)
Public, Hospital Discharge Data (1999, 2000, 2001, 2002, 2003)	

HIV Disease Summary

Information as of June 30, 2005 (based on 2000 population of 6,080,485)

HIV - without AIDS to date:

360	New HIV cases from July 2004 thru June 2005	12-month incidence	5.92 cases/100,000
3,595	Total HIV-positive, alive and without AIDS on June 30, 2005	Point prevalence	59.13 cases/100,000

AIDS cases to date:

370	New AIDS cases from July 2004 thru June 2005	12-month incidence	6.09 cases/100,000
3,740	Total AIDS cases, alive on June 30, 2005	Point prevalence	61.51 cases/100,000
7,641	Total AIDS cases, cumulative (alive and dead)		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in June *MMWR* Weeks 23-26		Cumulative Cases Reported January-June *MMWR* Weeks 1-26	
	2004	2005	2004	2005
Campylobacteriosis	17	8	135	111
Chlamydia	1,268	1,399	8,996	9,887
E. coli O157:H7	5	8	17	22
Hepatitis A	5	2	24	23
Hepatitis B	3	5	16	15
Invasive Drug Resistant *S. pneumoniae* (DRSP)	12	8	86	122
Invasive pneumococcal (less than 5 years of age)	5	8	26	37
Gonorrhea	472	591	3,098	3,888
Legionellosis	4	1	14	8
Lyme Disease	3	2	4	4
Measles	0	0	0	0
Meningococcal, invasive	4	4	12	12
Pertussis	3	4	40	146
Rocky Mountain Spotted Fever	3	0	4	0
Salmonellosis	47	21	205	171
Shigellosis	35	1	93	35
Syphilis (Primary and Secondary)	6	5	30	36
Tuberculosis	14	15	68	69
Animal Rabies	1 (bat)	1 (bat)	4 (3bats, 1skunk)	4 (bats)

For information on reporting of communicable diseases in Indiana, call the *ISDH Epidemiology Resource Center* at 317.233.7125.

Indiana
Epidemiology
Newsletter

The *Indiana Epidemiology Newsletter* is published by the Indiana State Department of Health to provide epidemiologic information to Indiana health professionals and to the public health community.